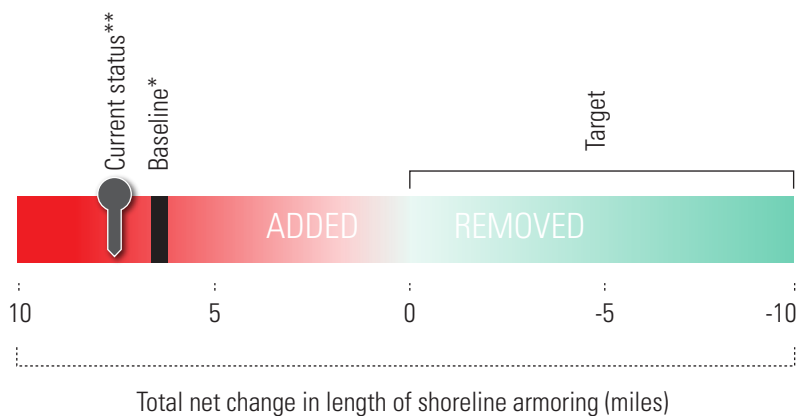


Shoreline Armoring

Amount of shoreline armoring

Progress Toward the 2020 Target

From 2011 to 2020, the total amount of armoring removed should be greater than the total amount of new armoring in Puget Sound (total miles removed is greater than the total miles added).



* Total net change in armoring from 2005 to 2010.

** Total net change in armoring from 2005 to 2011. There was a net gain in armoring of 0.88 miles between 2010 and 2011.

Is There Progress Toward the 2020 Target?

The analysis of current progress is pending due to the ongoing compilation and analysis of 2012 data. However, we can use data from 2005 through 2011 to report on status and trends of shoreline armoring and make some predictions about progress toward reaching the target by 2020.

The amount of new shoreline armoring in Puget Sound was substantially greater than the amount removed for every year from 2005 through 2011. In total, a net amount (new armoring minus removed armoring) of 6.6 miles of new armoring

was constructed during this time frame, or on average, 0.94 miles of additional armoring per year. Between 2010 and 2011 alone, a net amount of 4636 feet (0.88 miles) of shoreline armoring was added in Puget Sound. This pattern of added armoring is the opposite of what is needed to meet the 2020 target.

Although there has been a fairly constant increase in removal of armoring since 2005, new construction has remained fairly constant, particularly during the last four years. A notable exception occurred during 2006 and 2007, when



new construction was highest, perhaps due to significant storms and shoreline damage that occurred early in the period. Despite this, the general trend of added versus removed armor has shown little movement toward the target in recent years. During 2008 through 2011 the installation of new armoring exceeded removals by a factor of five.

Although more armoring has been removed in recent years (e.g., 2008-2011), it will take significant progress on both: a) decreasing the amount of new armoring and b) increasing the amount of removed armoring to meet the target by 2020. If the trend of adding and removing armoring exhibited by the data for 2005 through 2011 continues, an additional 8.5 miles of new armoring will be added to Puget Sound shorelines between 2011 and 2020, making it unlikely that the 2020 target will be met.

The 2020 target for shoreline armoring includes two other parts: 1) prevent new armoring and reduce existing armoring on feeder bluffs that supply sediments to Puget Sound shorelines and 2) use of soft shore techniques for new and replacement armoring where feasible. Activities are underway to report on these targets.



Puget Sound Shoreline Armoring Summary 2005-2011

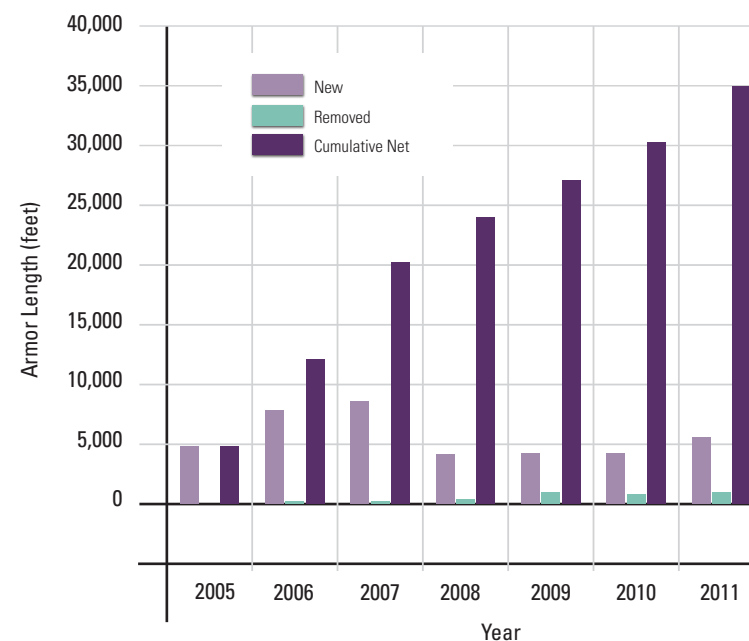


Figure 3.11.

Source: Data were compiled from the Hydraulic Project Approvals issued by the Washington Department of Fish and Wildlife, Habitat Program

Indicator Lead:

Randy Carman, Washington Department of Fish and Wildlife, and Hugh Shipman, Washington State Department of Ecology

For more in-depth information, please see:

www.psp.wa.gov/vitalsigns/shoreline_armoring.php

photo spread credit: Hugh Shipman